ABSTRACT OF THE DISCLOSURE

A signal transfer point (STP) within a Signaling System 7 (SS7) telecommunications network receives SS7 signals transmitted by a local switch. In response to a determination that the destination node specified by the received SS7 signal is connected to an Internet Protocol (IP) network, the serving STP encapsulates the received SS7 signal within an IP packet and transmits the IP packet over an IP network using an IP address identifying an application service provider (ASP) associated with a STP serving the specified destination local switch as the destination address. All other SS7 signals are transmitted over an existing SS7 telecommunications network.